Lahore Grammar School
Johar Town Senior Boys Campus

LAHORE GRAMMAR SCHOOL JOHAR TOWN FOR BOYS

INNOVENTIONS '24

INDULGE. INVENT. INNOVATE.

Feynman's Final Problem
(Study Guide)

11th-13th OCTOBER

Round 1: Intellectual Imposter

In this round, the ability of delegates to spot and relate physical situations with scientific phenomena will be tested. Team will be arranged in groups of 4. Each group will be allotted a physical situation in which different scientific phenomena are being applied. Out of 4 teams, 3 will be assigned a scientific concept that will be relevant to the situation and 1 will be assigned a concept which will not be factually relevant to the physical scenario given. Only one team allotted the wrong concept will be aware of it being the irrelevant situation.

A group discussion of the 4 teams will take place which will be monitored and moderated by a judge. It will be the aim of the team, who has the imposter concept, to scientifically defend their claim that it is relevant, while the other 3 teams will guess who the imposter is and prove that their scientific concept is in fact relevant to the situation at hand. After 30 minutes, the teams vote out their imposter. **This will not be an elimination round**.

Round 2: Pascal's Challenge

The Pascal's Challenge is a group-based scientific competition designed to assess the delegates' abilities to both create experiments and draw conclusions from them. Delegates will receive four footballs with varying air pressures (8, 12, 16, and 20 PSI) and are tasked with designing an experiment to test the relationship between air pressure and a dependent variable of their choice. Afterward, they will be given a new football with an unknown air pressure and must use their previous data and graphical analysis to estimate this unknown value. The available apparatus includes footballs, tape measures, and distance markers, offering participants flexibility in how they conduct their experiments.

However, there are strict rules in place: teams have 30 minutes to plan their experiment and one hour to conduct it, with 45 minutes for drawing conclusions. Exceeding time limits or unauthorized extensions will lead to disqualification. The experiment will take place on school grounds, and delegates are expected to adhere to safety precautions at all times. **This will be an elimination round.**

Round 3: Crisis in Los Alamos

In this round, delegates take on the role of Richard Feynman during the Manhattan Project at Los Alamos. They will be presented with a fictional crisis that scientists at the project might have faced, which could lead to a potential nuclear disaster. Their task is to create a 3-5 minute presentation offering a detailed theoretical solution to the crisis, explaining how the solution can be practically implemented, with the aid of diagrams and illustrations.

Delegates are given 1.5 hours to prepare after the crisis is revealed. Following each presentation, there will be a 3-minute question and answer session with the judges.

*any changes made by the category heads is final with respect to how the rounds of each category proceed